

**REMARKS**

Claims 1-9 have been examined.

**Preliminary Matters**

Applicant would like to thank the Examiner for indicating that the items listed in the Information Disclosure Statement (Paper No. 5) filed September 19, 2000, have been considered. However, Applicant notes that the Examiner has not initialed the foreign patent document JP 11-87512. Therefore, Applicant respectfully requests that the Examiner include in the next office communication a copy of the initialed form PTO-1449 for Applicant's records.

**Claim Rejections Under 35 U.S.C. § 102(b)**

The Examiner has rejected claims 1-9 under 35 U.S.C. § 102(b) as being anticipated by Toyota et al. (JP405166965A). For the following reasons, Applicant traverses this rejection.

Toyota et al. provides a package structure, which is able to be easily matched to an external circuit in impedance by a method wherein a transmission line such as a microstrip line is formed throughout a surface side signal line and a rear side signal line and controlled in specific impedance by through-holes lined in one direction. An insulating board 44 provided with through-holes 56 and 58 where a semiconductor chip 42 is mounted, a rear side ground pattern 52 formed on the rear side of the insulating board 44, and a front side ground pattern 48 connected to the rear-side ground pattern 52 are provided. A surface-side signal line 46 which forms a transmission line with the surface side ground pattern 48 and/or the rear-side ground pattern 52 and the rear-side signal line 50 which forms a microstrip line with the surface-side

ground pattern 48 connected to the surface-side signal line 46 are provided. The package structure of this design allegedly can be easily matched to an outer circuit in impedance.

A semiconductor device of the present invention comprises a signal transmission line of a microstrip structure, capable of increasing the characteristic impedance of the signal transmission line and reducing coupling between a plurality of signal lines. In a signal transmission line of a microstrip structure, composed of a signal transmission line and a ground plate, the capacitance between wires is reduced and the characteristic impedance can be increased by forming holes 13, 23, 33, or 34 in the signal line 11, 21 or 31 and a ground plate 12, 22 or 32. The coupling between a plurality of signal lines can also be reduced.

In the present invention, the holes or slits are formed such that the characteristic impedance and the AC coupling between one signal line to another signal line can be increased as high as possible and the characteristic impedance between the signal lines and the ground plate can be increased as high as possible.

The present invention has a feature that holes or slits are formed in the signal lines or in the ground plate so as to increase the characteristic impedance between two adjacent signal lines or between one signal line and the ground plate, and this feature is neither disclosed nor suggested by the cited reference. The other point which distinguishes the present invention from the reference is that the cited reference does not disclose to dispose holes in the direction other than the direction of the signal lines 46 and 56. Therefore, Applicant submits that this rejection should be withdrawn.

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Application No. 09/664,094

**Claim rejections under 35 U.S.C. § 103(a)**

The Examiner has rejected claims 8-9 as being unpatentable over Toyota et al. Applicant submits that claims 8 and 9 are patentable over Toyota et al. for at least the same reasons as set forth above, and therefore, this rejection should also be withdrawn.

In view of the foregoing remarks, the present invention is neither anticipated nor rendered obvious by the cited reference, and therefore, this rejection should be withdrawn

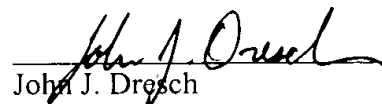
**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

SUGHRUE MION, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, D.C. 20037-3213  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

  
John J. Dresch  
Registration No. 46,672

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**APPENDIX**  
**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

**The claims are amended as follows:**

1.     (Amended) A semiconductor integrated circuit comprising a signal transmission line of a microstrip structure comprising ~~composed of~~ a signal line and a ground plate, wherein at least one hole is formed in said signal line.
  
2.     (Amended) A semiconductor integrated circuit comprising a signal transmission line of a microstrip structure comprising ~~composed of~~ a signal line and a ground plate, wherein at least one hole is formed in said ground plate.
  
3.     (Amended) A semiconductor integrated circuit comprising a signal transmission line of a microstrip structure comprising ~~composed of~~ a signal line and a ground plate according to claim 2, wherein the size of said at least one hole formed in said ground plate is determined such that the AC coupling between the signal line and another signal line disposed close to the signal line and on the opposite side of said ground plate is decreased and the characteristic impedance of said signal transmission line is increased.

4.     (Amended) A semiconductor integrated circuit comprising a signal transmission line of a microstrip structure comprising ~~composed of~~ a signal line and a ground plate according to claim 2, wherein the number of said at least one hole formed in said ground plate is determined such that the AC coupling between the signal line and another signal line disposed close to the signal line and on the opposite side of said ground plate is decreased and the characteristic impedance of said signal transmission line is increased.

5.     (Amended) A semiconductor integrated circuit comprising a signal transmission line of a microstrip structure comprising ~~composed of~~ a signal line and a ground plate, wherein at least one hole is formed in both of said signal line and said ground plate.

6.     (Amended) A semiconductor integrated circuit comprising a signal transmission line of a microstrip structure comprising ~~composed of~~ a signal line and a ground plate according to claim 5, wherein the size of said at least one hole formed in said ground plate among the signal line and the ground plate is determined such that the AC coupling between the signal line and another signal line disposed close to the signal line and on the opposite side of said ground plate is decreased and the characteristic impedance of said signal transmission line is increased.

7.     (Amended) A semiconductor integrated circuit comprising a signal transmission line of a microstrip structure comprising ~~composed of~~ a signal line and a ground plate according

to claim 5, wherein the number of said at least one hole formed in said ground plate among holes formed in both of the signal line and the ground plate is determined such that the AC coupling between the signal line and another signal line disposed close to the signal line on the opposite side of said ground plate is decreased and the characteristic impedance of said signal transmission line is increased.

8.     (Amended) A semiconductor integrated circuit comprising a signal transmission line of a microstrip structure comprising~~composed of~~ a signal line and a ground plate according to claim 2, wherein said at least one hole in said ground plate is formed at a position where the other signal line is not disposed or said at least one hole in said ground plate is made small so as to reduce the AC coupling with one signal line when formed at a position where the other signal line is disposed.

9.     (Amended) A semiconductor integrated circuit comprising a signal transmission line of a microstrip structure comprising~~composed of~~ a signal line and a ground plate according to claim 1, wherein, instead of at least one hole formed in said signal line or in said ground plate, a plurality of slit holes are formed by forming said signal line or said ground plate of a plurality of thin strips and by connecting these thin strips at those terminal ends.